

Atty Dkt. No.: CLON-028  
USSN: 09/976,673

### AMENDMENTS

#### In the claims:

1. (Currently Amended) A nucleic acid present in other than its natural environment, wherein said nucleic acid encodes an a far red shifted Stichodactylidaen chromoprotein or fluorescent mutant thereof
2. (Original) The nucleic acid according to Claim 1, wherein said nucleic acid is isolated.
3. (Currently Amended) A nucleic acid present in other than its natural environment, wherein said nucleic acid encodes a fluorescent protein having an emission maximum ranging from about 580 to 660 620 to 680 nm.
4. (Original) The nucleic acid according to Claim 3, wherein said nucleic acid is isolated.
5. (Currently Amended) A nucleic acid present in other than its natural environment having a sequence of residues that is similarity of at least about 80% with substantially the same as or identical to a nucleotide sequence of at least 10 residues in length of SEQ ID NOS: 01-14 chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27.
6. (Currently Amended) The nucleic acid according to Claim 5, wherein said ~~nucleic acid has a~~ sequence similarity is of at least about 90% 60% ~~with a sequence of at least 10 residues in length selected from the group of sequences consisting of SEQ ID NOS: 01-14.~~
7. (Currently Amended) A fragment of the nucleic acid selected from the group consisting of:
  - (a) a nucleic acid that encodes an a far red shifted Stichodactylidaen

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chromoprotein or fluorescent mutant thereof;

(b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about ~~580 to 660~~ 620 to 680 nm; and

(c) a nucleic acid having a sequence of similarity of at least about 80% with ~~substantially the same as or identical to~~ a nucleotide sequence of at least 10 residues in length of ~~SEQ ID NOS: 01-14~~ chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27;

wherein said fragment encodes a fluorescent product and is present in other than its natural environment.

8. (Currently Amended) An isolated nucleic acid or mimetic thereof that hybridizes under stringent conditions to a nucleic acid selected from the group consisting of:

(a) a nucleic acid that encodes ~~an~~ a far red shifted Stichodactylidaen chromoprotein or fluorescent mutant thereof;

(b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about ~~580 to 660~~ 620 to 680 nm; and

(c) a nucleic acid having a sequence of similarity of at least about 80% with ~~substantially the same as or identical to~~ a nucleotide sequence of at least 10 residues in length of ~~SEQ ID NOS: 01-14~~ chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27;

or its complementary sequence.

9. (Currently Amended) A construct comprising a vector and a nucleic acid selected from the group consisting of:

(a) a nucleic acid that encodes ~~an~~ a far red shifted Stichodactylidaen chromoprotein or fluorescent mutant thereof;

(b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about ~~580 to 660~~ 620 to 680 nm; and

(c) a nucleic acid having a sequence of similarity of at least about 80% with ~~substantially the same as or identical to~~ a nucleotide sequence of at least 10 residues in

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~~length of SEQ ID NOS: 01-14~~ chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27;

~~(d) — a fragment of the above nucleic acids; and~~

~~(e) — a nucleic acid or the complement thereof that hybridizes under stringent conditions to the above nucleic acids.~~

10. (Currently Amended) An expression cassette comprising:

(a) a transcriptional initiation region functional in an expression host;

(b) a nucleic acid selected from the group consisting of the nucleic acids of:

(i) a nucleic acid that encodes a far red shifted Stichodactylidae chromoprotein or fluorescent mutant thereof;

(ii) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and

(iii) a nucleic acid having a sequence of similarity of at least about 80% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27 ~~Claims 1 to 9~~; and

(c) and a transcriptional termination region functional in said expression host.

11. (Original) A cell, or the progeny thereof, comprising an expression cassette according to Claim 10 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell.

12. (Original) A method of producing an Anthozoan chromo and/or fluorescent protein, said method comprising:

growing a cell according to Claim 11, whereby said protein is expressed; and  
isolating said protein substantially free of other proteins.

13. (Withdrawn) A protein or fragment thereof encoded by a nucleic acid selected from the group consisting of Claims 1 to 9.

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14. (Withdrawn) An antibody binding specifically to a protein according to Claim 13.
15. (Withdrawn) A transgenic cell or the progeny thereof comprising a transgene selected from the group consisting of a nucleic acids according to any of Claims 1 to 9.
16. (Withdrawn) A transgenic organism comprising a transgene selected from the group consisting of a nucleic acids according to any of Claims 1 to 9.
17. (Withdrawn) In an application that employs a chromo- or fluorescent protein, the improvement comprising:  
employing a protein according to Claim 13.
18. (Currently Amended) In an application that employs a nucleic acid encoding a chromo- or fluorescent protein, the improvement comprising:  
employing a nucleic acid selected from the group consisting of:  
(i) a nucleic acid that encodes a far red shifted Stichodactylidaen chromoprotein or fluorescent mutant thereof;  
(ii) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and  
(iii) a nucleic acid having a sequence of similarity of at least about 80% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27-according to Claims 1 to 9.
19. (Currently Amended) A kit comprising:  
a nucleic acid selected from the group consisting of:  
(i) a nucleic acid that encodes a far red shifted Stichodactylidaen chromoprotein or fluorescent mutant thereof;  
(ii) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and

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**(iii) a nucleic acid having a sequence of similarity of at least about 80%  
with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13,  
15, 17, 19, 23, 25 and 27 according to Claims 1 to 9; and  
instructions for using said nucleic acid.**

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**(iii) a nucleic acid having a sequence of similarity of at least about 80%  
with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13,  
15, 17, 19, 23, 25 and 27 according to Claims 1 to 9; and**  
instructions for using said nucleic acid.